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## AMENDED PATENT CLAIMS

1. (original) A method of selectively detecting and/or quantifying super paramagnetic and/or ferro magnetic particles, characterized in that based upon the nonlinearality of the magnetization characteristics of the particles, frequency components of magnetic fields generated by their magnetization are measured in terms of mixed frequencies.

2. (original) The method according to claim 1, characterized in that the particles, for modulating their magnetization characteristics (5) , are subjected to a modulating magnetic field (4, 18) of predetermined frequency.

3. (currently amended) The method according to ~~one of the preceding claims~~ claim in which the modulating magnetic field (4, 18) has a frequency between 50 and 100 hertz.

4. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 characterized in that the particles are subjected to a scanning magnetic field (15) with a frequency different from the modulating magnetic field (4, 18).

5. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 in which the scanning magnetic field (15) has a frequency between 10 and 100 kilo hertz.

6. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 characterized in that a response magnetic field (19) of the particle induced by the effect of the two alternating magnetic fields (15, 18) thereon is measured.

7. (currently amended) The method according to ~~one of the preceding claims~~ claim 1, characterized in that the amplitude variation (8, 11) of the response magnetic field (19) is measured at the frequency of the scanning magnetic field (15).

8. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 in which the frequency components of the amplitude variation (8, 11) of the response magnetic field (19) at the frequency of the scanning magnetic field (15) are measured as whole number multiple of the frequency of the modulating magnetic field (4, 18).

9. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 in which the frequency components of the amplitude variation (8, 11) of the response magnetic field (19) to the frequency of the scanning magnetic field (15) are measured

for the even number multiple of the frequency of the modulating magnetic field (4, 18).

10. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 in which the frequency components of the amplitude variation (8, 11) of the response magnetic field (19) to the frequency of the scanning magnetic field (15) is measured, for the signal which is twice the frequency of the modulating magnetic field (4, 18).

11. (currently amended) The method according to ~~one of the preceding claims~~ claim 1 characterized in that the amplitude variation (11) of the response magnetic field (19) is converted and as an output voltage (24) is used to determine the concentration of the analyte.

12. (original) A device for the selective detection and/or quantification of super power magnetic and/or thermal magnetic particles with analytes, comprising:

a vessel (12) with an analyte to be detected or to be quantified,

at least one oscillator (13, 16; 25) for producing frequencies of alternating magnetic fields (15, 18),

at least one field generator (14, 17) for subjecting the analyte to alternating magnetic field (15, 18),

a magnetic field sensor (20) for measuring a response magnetic field (19) of the particles, and

at least one phase sensitive detector (21, 23).

13. (original) The device according to claim 12 comprising at least one frequency dividers (26, 27, 28, 29, 30) for dividing the frequency of the oscillator (25).

14. (original) The device according to claim 13 characterized in that the frequency divider or frequency dividers (26, 27, 28, 29, 30) divide the oscillator frequency in proportions of whole positive numbers.

15. (currently amended) The device according to claim 13~~ or 14~~, characterized in that the frequency dividers (26, 27, 28) divide the oscillator frequency into the ratios

$$\frac{1}{\ell},$$

$$\frac{1}{m \cdot n}$$

$$\frac{1}{n}$$

16. (currently amended) The device according to ~~one of claims 13 through 15~~ claim 13 characterized in that the frequency dividers (28, 29, 30) divide the oscillator frequency in the ratios of

$$\frac{1}{n}$$

$$\frac{1}{n+m}$$

$$\frac{1}{n(n+m)}$$

17. (currently amended) The device according to ~~one of the preceding claims 15 or 16~~ claim 15 with whole positive numbers for l, m, n.

18. (currently amended) The device according to ~~one of the preceding claims 15 - 17~~ claim 15 with m as an even number, especially with m=2.

19. (currently amended) The device according to ~~one of the preceding claims13 - 18~~ claim 13with at least one frequency divider (26, 28) dividing the oscillator frequency into a reference frequency which is stored in at least one phase sensitive detector (21, 23).

20. (currently amended) The device according to ~~one of the preceding claims 13 - 19~~ claim 1 in which a frequency from one frequency divider (26) of the oscillator frequency is stored as a reference in one phase sensitive detector (21) and a frequency from another frequency divider (28) dividing the oscillator frequency is stored as a reference in another phase sensitive detector (23).

21. (currently amended) The device according to ~~one of the preceding claims 13 - 20~~ claim 13, characterized in that field generators (14, 17) are provided which are controlled by the frequencies of the frequency dividers (26, 27; 29, 30).

22. (currently amended) The device according to ~~one of the preceding claims 12 - 21~~ claim 12 comprising at least one frequency multiplier (22).

23. (currently amended) The device according to ~~one of the preceding claims 12 - 22~~ claim 12, characterized in that the magnetic field sensor (20) is configured as a differential field sensor.

24. (currently amended) The device according to ~~one of the preceding claims 12 - 23~~ claim 12, characterized in that the magnetic field sensor (20) comprises two partial coils of the same construction type.

25. (currently amended) The device according to ~~one of the preceding claims 12 - 24~~ claim 12, characterized in that the partial coils of the magnetic field sensor (20) are wound in opposite sensors.

26. (currently amended) The device according to ~~one of the preceding claims 12 - 25~~ claim 12 characterized in that the partial coils of the magnetic field sensor (20) are connected in series.

27. (currently amended) The device according to ~~one of the preceding claims 12 - 26~~ claim 12, characterized in that the container with the analyte is in contact with only one of the two partial coils of the magnetic field sensor (20).